The Effects of State Delinquent Tax Collection Outsourcing on Administrative Effectiveness, Efficiency, and Procedural Fairness

Jang, Sungkyu; Eger, Robert J. III

American Review of Public Administration
1–16

DOI: 10.1177/0275074018759435
journals.sagepub.com/home/arp
SAGE

The Effects of State Delinquent Tax Collection Outsourcing on Administrative Effectiveness, Efficiency, and Procedural Fairness

Sungkyu Jang[1] and Robert J. Eger III[2]

Abstract

Since the 1980s, state governments have been using private debt collection agencies as facilitators and expediters in the delinquent tax collection process. The use of private collection agencies incorporates administrative effectiveness, efficiency, and procedural fairness, which can lead to an increase in revenues without affecting either the tax base or rate while protecting taxpayers. Using state-level panel data for the years 2000 to 2011, the administrative effectiveness outcome is that private collectors do not reduce the aggregate delinquent tax inventory, but the administrative efficiency outcome is that private collectors reduce collection cost. For procedural fairness, private collectors have a positive effect on the number of tax appeals filed in a state tax department with a Republican governor; however, they decrease the number of tax appeals filed with an outside-independent tax appeal agency.

Keywords

Procedural fairness, tax collection, administrative effectiveness

Introduction

It is commonly assumed that tax collection is an inherent function of government. Prior to the introduction of a comprehensive bureaucracy, governments commonly contracted with private agencies, known as "tax farmers," to enhance their tax collection capacities. During the 19th century, the use of tax farmers declined with the institutionalization of the administrative bureaucracy.

Since the 1980s, state governments in the United States have reintroduced tax farming as a facilitator and expediter in the delinquent tax collection process. In 1978, New Mexico reintroduced the contracting out of delinquent taxes with private collection agencies. Currently, several states (e.g., Colorado, New Jersey, and Illinois) use private debt collection companies for delinquent tax collection, whereas others (e.g., Arizona, Tennessee, and Washington) do not outsource delinquent tax collection. These tax collection practices raise the question of what results can be observed from state governments' contracting out delinquent tax collection with private companies? The literature on tax farming and theory of agency imply that tax collection contracting out would be administratively effective and efficient, but may induce procedural bias by encouraging private tax collectors to exploit taxpayers in maximizing their expected return. This article empirically explores the implication to administrative effectiveness, efficiency, and procedural fairness when a state government contracts out delinquent tax collections using state panel data for the years 2000 to 2011.

Tax delinquency is defined as the "failure of timely payment of tax due" (Mikesell, 1976). Like tax evasion, tax delinquency damages the government's fiscal health in terms of revenue and equity. Tax delinquency leads to revenue loss and increasing costs of collection. The government is compelled to implement enforcement collection processes that are costlier to both the government and the taxpayer. Tax delinquency can be seen as a mechanism that can shift honest taxpayers toward noncompliance, leading to a violation of the equity principal in taxation. Reduced compliance rates decrease tax revenue and increase tax collection cost in the long run.

This article contributes to practice in tax collection and the literature on tax administration and contracting out. The empirical results of this study on states' alternative tax collection practices provide useful implications to state and local tax administrators. It provides insight for federal tax administrators who have been considering contracting out the collection of delinquent federal income tax with private debt collection companies since the 1990s. One of the current issues in government administration has been the

[1]Indiana University South Bend, USA
[2]Naval Postgraduate School, Monterey, CA, USA

Corresponding Author:
Robert J. Eger III, Professor of Accounting and Public Policy, Graduate School of Business and Public Policy, Naval Postgraduate School, 555 Dyer Road, Monterey, CA 93934, USA.
Email: rjeger@nps.edu

growth in delinquencies and the effects on service provision and taxpayer burdens. In fiscal year 2011, the federal unpaid tax debt inventory rose to US$373.2 billion (U.S. Government Accountability Office, 2012), a 29% increase over the US$290.1 billion unpaid inventory of 2007 (U.S. Government Accountability Office, 2008). This growth in delinquency is apparent at the state level where contemporary research shows an increase in tax amnesty programs since 2000, an attempt to recover the growth in tax delinquency in sales and other taxes (Mikesell & Ross, 2012).

Changes in collection administration are associated with the dilemma of effective and efficient collection and the protection of taxpayers' rights due to the potentially invasive collection behavior of debt collection companies. If the government can collect tax receivables effectively and efficiently through private collection agencies, the outcome can lead to an increase in revenues without affecting either the tax base or rate while protecting taxpayers. Tax collection outsourcing would be a way to mitigate fiscal hardship given that increased collection leads to higher revenues. Increased collections have the potential to reduce politically unpopular decisions such as tax rate changes, may enhance services due to increased revenues, and provide citizens the opportunity to observe "fairness" in the revenue collection process given that each citizen is treated similarly by public administrators.

This article contributes to the literature on contracting and tax administration. While the public administration literature on contracting tends to focus on the spending side of government functions, provision of public services, this study explores the revenue side of government functions, funding of public service. While much of the literature in tax administration focuses on tax evasion, this study addresses tax delinquency and explores tax collection outsourcing through an empirical evaluation.

The following sections present an overview of the previous literature on contracting, tax administration, and tax collection outsourcing, highlighting key propositions. The hypotheses are then developed based on the propositions. An overview of the states' current delinquent tax collection outsourcing practice and a discussion on measurement of agency costs in tax collection is then pursued. Attention is turned to the regression models and data. Finally, a presentation of the empirical results is offered followed by the implication of the results.

Literature Review

Since the 1980s, a growing attention to alternative service delivery has led to the extant literature on contracting out and privatization. Within the literature is the normative argument about whether to contract out, along with the issues underlying this choice (Brown, Potoski, & Van Slyke, 2006; Fosler, 1978; Milward & Provan, 2000; R. C. Moe, 1987; Park, 1987; Poole & Fixler, 1987; Prager, 1994; Sappington & Stiglitz, 1987; Sullivan, 1987) and a rich history of empirical studies assessing the contracting out of multiple functions, for example, garbage collection, education, defense, police, prison, social service, and so on (Boyne, 1998; Marvel & Marvel, 2007; Ni & Bretschneider, 2007; Pack, 1989; Romzek & Johnston, 2005). In terms of financial management and budgeting, these previous studies on contracting out explore the expenditure side of government functions. There is limited empirical research on the revenue side implications of contracting out. In addition to the research that focuses on either the expenditure or revenue side, there is a limited literature on contracting out that includes both expenditure and revenue implication of governance structure (da Cruz, Berg, & Marques, 2013; Liu, Hotchkiss, & Bose, 2008). This literature is focused on fee-based activities, such as public utilities and health care services, rather than general fund or tax-based activities such as tax collection.

In tax administration, it is important not only to detect underreported taxes but also to collect reported taxes. Since Becker's (1968) work on the economics of crime and punishment, along with Allingham and Sandmo's (1972) and Srinivasan's (1973) work on tax evasion, the economic literature on tax compliance has focused on tax evasion while ignoring the role of tax collection. Subsequently, Mikesell's (1974) work on tax administration introduced the public administration literature to tax compliance with the majority of the studies concentrating on tax evasion issues, such as tax audit and amnesty (Denison & Eger, 2000; Eger & Hackbart, 2005; Luitel & Sobel, 2007; Mikesell, 1984; Mikesell & Ross, 2012; Parle & Hirlinger, 1986; Song & Yarbrough, 1978). While there are some studies on tax delinquently in the public administration literature, such as Mikesell's (1976) study on economic factors influencing property tax delinquency and Snavely's (1988, 1989) survey on strategies and tools for tax compliance and delinquency control, there is little empirical work on the effects of alternative tax delinquency control methods.

Historical studies on tax farming (Webber & Wildavsky, 1986; Azabou & Nugent, 1988, 1989; Kiser, 1994; Levi, 1988; Ma, 2003; White, 2004) provide a key proposition about tax collection outsourcing, tax farming was financially/administratively effective and efficient but it indicated the potential for the mistreatment of taxpayers. Based on this historical lesson, multiple disciplines have studied the impact of contracting out tax collection in a contemporary context, for example, private tax collection studies attentive to legality (Alexander, 2000; Melita, 1997; Poindexter, Rogovoy, & Wachter, 1997; Resnick, 2005; C. N. Smith, 1997), public administration (Hood, 1986; Byrne, 1995; Iversen, Fjeldstad, Bahiigwa, Ellis, & James, 2006), public policy (Kiser & Baker, 1994; Stella, 1993), and economics (Cosgel & Miceli, 2009; Escobari, 2012; Toma & Toma, 1992). Although these studies provide rich theoretical arguments about the applicability of the old idea of tax farming to contemporary tax collection issue, they do not offer any concrete empirical evidence based on contemporary data.

Theory of Agency

This study adopts the theory of agency (Jensen & Meckling, 1976; Mirrlees, 1976a, 1976b; Ross, 1973) as a framework to conceptualize the tax collector's behavior and level of collection effort in a delegated contract setting under different contract forms. Expansion and application of the framework by Jensen and Meckling (1976) regarding ownership structure, and Mirrlees's (1976b) work on optimal structure of incentives and authority, are notable. Further interest in public policy and administration are found in studies on the relationship between the bureaucracy and elected officials (Mitnick 1973, 1975; T. M. Moe, 1982, 1984; B. D. Wood & Waterman, 1991; Wood & Waterman, 1993) and the budgetary relationship (R. W. Smith & Bertozzi, 1998).

Using the theory of agency, tax revenue is produced through combining the tax base, tax rate, and the tax administrator's collection effort. The politicians first determine tax rates and bases by passing tax legislation, but tax revenue is not automatically generated. The process requires a tax collection effort. To realize tax revenue, tax administrators, such as state tax departments and the Internal Revenue Service (IRS), implement tax legislation by inputting a tax collection effort. Without the collection effort, the government would have tax receivables with an unknown amount of tax revenue. Thus, the level of tax revenue depends on the level of the tax collector's collection effort, holding other factors constant. This allows the government the opportunity to indirectly choose the level of effort of the tax collection agent by offering different compensation schemes to maximize its tax revenue. In the theory of agency, the agent's behavior is usually interpreted as level of effort.

In a delegation situation, the agent's behavior usually deviates from the principal's intention. To mitigate the agency problem, which introduces agency cost, the principal selects a compensation system. The principal (the government) can incentivize the agent (the tax collector) to exert a high level of effort to implement his or her delegated tasks by offering performance-based compensation, such as fixed-rent or revenue share contracts. Alternatively, the principal can force the agent to input a minimal necessary level of effort by setting a monitoring system with fixed compensation, such as wage contracts under the in-house system. Thus, the contract form represents the compensation scheme.

There are alternative theories to the theory of agency. Self-regulation theories concentrate on intrinsic sociopsychological factors whereas the theory of agency focuses on extrinsic financial compensation to motivate employees to improve their performance. The theory of agency argues that if there is no functional relationship between public sector employee's performance and his or her financial reward, the public sector employee is likely to shirk. Thus, agency theory suggests performance-based financial rewards to encourage the public employee to increase their level of effort. Alternatively, self-regulation theories, such as the self-determination theory (Deci & Ryan, 1985, 2000), the social cognitive theory (Bandura, 1986, 1988; R. Wood & Bandura, 1989; Wright, 2004), and public service motivation theory (Perry & Wise, 1990), argue that a public employee's motivation (level of effort) is based on the public goods and services accomplishments because public service organizations focus on achieving mission-centered goals. These self-regulation theories argue that public employees are motivated because their jobs are meaningful. To improve employees' performance, self-regulation theories suggest designing jobs and tasks to satisfy the public employee's psychological needs.

We believe that a balanced idea of motivation should be used to fully understand public sector employees' because the public employee is motivated by both the external monetary reward and the internal psychological reward. However, this article adopts the theory of agency to measure the effect of incentive-based tax collection, the use of the private tax collector, on collection performance. The fact that many state governments have been using private tax collectors based on an incentive-based contract implicitly indicates that delinquent tax collection outsourcing practices are built on the theory of agency. State governments have questioned the public tax collector's performance, which has contributed to the state governments' adoption of pay-for-performance incentive contracts with private collectors. This action is different than the alternative, which would have been motivating the public collector through psychological mechanisms such as professional norms, standards, or intrinsic mission orientation. If the effect of incentive-based tax collection on collection performance, such as administrative effectiveness, efficiency, and procedural fairness, is not significant, then we may conjecture that the public tax collectors' intrinsic motivation factors may have an effect on the results.

Contract Forms and Trade-Off of Agency Costs

In the theory of agency, tax collections are categorized by the compensation scheme into the following three forms: fixed-wage, fixed-rent, and revenue share contracts. The fixed-wage (or hierarchy-oriented) contract is a control-based, low-powered scheme whereas the fixed-rent and revenue share contracts are incentive-based (or market-oriented) contracts, which are high-powered incentive schemes.

From the perspective of agency theory, a bureaucratic in-house tax collection system is viewed as a fixed-wage contract, where the public employee tax collectors are theoretically seen to choose a low level of effort, thereby shirking, because there is no direct functional relationship between the agent's performance and compensation. Although employee wages may increase or change in the long run, it is rare for the public agent to immediately receive financial compensation corresponding to his or her performance. Recently, the compensation structure to incentivize

public employees has become similar to outcome-based compensation in private firms (i.e., bonus incentives); however, this is not observed in the tax collection performance of either the IRS or state governments. Under the fixed-wage contract, it is expected that the tax collection employee will choose a low level of effort in the collection of delinquent taxes. This expectation reduces the possibility of conflicts between tax collectors and taxpayers. The growth in delinquent taxes may be partially attributable to the nonincentive nature of the fixed-wage contract.

Contrary to the fixed-wage contract, the collectors' level of effort and return, in a tax-farming contract, incentivizes the private tax collector to choose a higher level of effort. There are two types of tax-farming contracts, a fixed-rent contract and a revenue share contract. In a fixed-rent contract, the private tax collector is likely to choose the highest level of collection effort because the collector owns the rights to the taxes collected. In the contemporary situation, property tax sales can be viewed as a fixed-rent contract of tax farming. Local government sells off their property tax uncollectable accounts at a discounted price.

In a revenue share contract, the private collector is likely to choose a modest level of collection effort, which is lower than the effort under a fixed-rent contract but is higher than the effort under a fixed-wage contract. In the contemporary situation, state governments utilize a revenue share contract under which states hire private collection agencies to collect their delinquent taxes and pay the private agency a proportion of the delinquent taxes collected. In the current U.S. debt collection industry, most third-party debt collection contracts are revenue share contracts, under which the private debt collector receives a commission, which is usually about 25% of collected revenue (Association of Credit and Collection International, 2007). In many private debt collection companies, "to motivate staff, private collectors routinely use collection performance statistics as a basis for evaluating their collectors and for determining compensation and incentive awards" (U.S. Government Accounting Office, 1993). It can be expected, under commission-based or revenue-based contracts, that the private collection agent inputs a higher level of effort to collect taxes to maximize its financial share as compared with the effort under a fixed-wage contract. Given the competitive nature of the private debt collection, this market will induce private collector firms to engage in bidding for state tax collection accounts. As identified by Melita (1997), "the field of private debt collection is densely populated. Some 3,700 firms belong to the ACA nationwide" (p. 714).

Given the private tax collection marketplace, tax farming may solve the problem of a tax collector's shirking behavior under the fixed-wage contract but may lead to harassment or mistreatment of taxpayers due to overzealous collection efforts. This outcome leads to a trade-off between shirking and overzealous collection, which is consistent with the trade-off between two competing administrative values in tax collection: financial administrative effectiveness and efficiency and procedural fairness. Contracting out tax collections may be administratively effective and efficient but can introduce negative effects on procedural fairness.

State Delinquent Tax Collection Outsourcing Practices

According to the data collected through emails, 29 states currently use private collectors, four states have prior experience using private collection agencies but currently do not use private collectors, six states have never used private collection agencies, and 11 states did not response to our email. According to the U.S. General Accounting Office's 1994 report on state delinquent tax collection methods and our information collected by email responses from state tax collection agencies, since the 1980s, many state governments have been using private debt collection agencies, such as private collection companies and law firms, as facilitators and expediters for state delinquent taxes including individual income tax, corporate income tax, sales and use taxes, employment tax, and other taxes.

The contemporary contracting out-of-state delinquent tax collection is not a pure form of tax farming. Although the early historical tax farming was completely privatized, the contemporary contracting out is a hybrid-privatized tax collection system. In other words, the early historical tax farming was a substitute for the underdeveloped bureaucratic collection system, whereas the current outsourcing of delinquent tax collection supplements the public tax collection agencies. While under the early history of tax-farming contract, private tax collectors did all collections, the state maintains collection efforts and contract for some subset of delinquent accounts.

According to the U.S. General Accounting Office's (GAO) 1994 report, there is a usual process that the states refer delinquent cases to private collectors, although some variation exists. Usually, over a period of about 4 months, the state sends three bills, which is the median number of collection bills. Then, the state starts to expedite the collection process, for example, using automated telephone collection, arranged personal face-to-face meetings with delinquent taxpayers, and license and permit enforcement programs. If the state tax collection agencies fail to contact or collect from a delinquent taxpayer within about 12 months, delinquent cases are referred to private collectors. Twelve months is the median age for delinquent cases referred to private collector while the range is 3 to 24 months. For dollar values, the median dollar amount for cases referred to private collectors is US$400, with a range of US$100–US$10,000.

Although there may be variation among states, the private collection agency assists state collection agencies in many ways, including locating delinquent taxpayers, making telephone calls to remind taxpayers of tax delinquencies, mailing tax notices, and establishing repayment agreements.

Collection agencies' suggest various payment methods such as cash, credit card, and installment payments, along with offering compromises, which are legal contracts between delinquent taxpayers and states to settle delinquent taxes for less than the amount of the delinquent taxes owed. Collection agencies may be allowed to enforce administrative wage garnishment payments and resolve delinquent taxes administratively by determining that a delinquent taxpayer is deceased, bankrupt, or out of business.

This article attempts to capture the impact of private tax collectors on tax collection performance, such as efficiency and effectiveness and fairness, by comparing states using state tax department employees only and states using both their tax department and private collection agencies. If there is a difference between these two state groupings, the difference may be due to the use of private collection agencies.

Measurement of Agency Costs in Tax Collection

In measuring agency costs, administrative effectiveness, efficiency, and procedural fairness are important managerial values. However, there is a potential trade-off among these values. Administratively effective and efficient tax collection processes may lead to a negative effect on procedural fairness. To abide by legal requirements to minimize the taxpayer's loss from overzealous collection, a sacrifice in administrative effectiveness and efficiency may be required. The objective of the tax collector is to maximize tax revenue at minimum cost while integrating a fair procedure. We try to measure the effect of the use of private collectors on delinquent tax collection performance in terms of administrative effectiveness, efficiency, and procedural fairness.

Administrative Effectiveness and Efficiency

According to the theory of agency, the cost of shirking in organizations leads to a low level of performance due to a lack of incentives. A rationale for the use of private tax collectors is that states can expect an effective and efficient tax collection. The General Accounting Office's (1994) report indicated that "state tax departments use private collection companies to take advantage of their vast collection experience, to gain state-of-the-art computer technology for managing receivables, to avoid the expense of hiring permanent staff, and to supplement their own collection staff" (p. 10).

Administrative effectiveness of tax administration refers to the extent to which the tax collector collects the tax receivable. To measure administrative effectiveness in tax administration, this article uses the amount of tax receivable inventory. The variable is normalized by state tax revenue. To measure delinquent tax collection performance, the level of tax receivables is used as the proxy. The ideal measure of delinquent tax collection performance would be to measure the level of delinquent tax inventory itself. None of states, however, report the amount of delinquent taxes independently of tax receivables. To assure that delinquent tax inventory is accessible, each state's Comprehensive Annual Financial Reports (CAFRs) are evaluated. Delinquent tax inventory amounts were not provided in this public information. Although state CAFRs did not provide delinquent tax inventory amounts, most CAFR's provided the amount of tax receivables. The amount of tax receivables is an aggregated amount of accumulated delinquent taxes, current delinquent taxes, and current tax receivables. In terms of generally accepted accounting principles, while tax receivables are not identical to delinquent taxes, tax receivables incorporate the broader concept of delinquent taxes. In practice, federal and state governments use both the level of tax receivables and delinquent taxes to assess tax collection performance (U.S. Department of the Treasury, 2013; Texas Comptroller of Public Accounts, 2014).

Administrative efficiency of tax administration refers to the collection of taxes at the lowest possible cost. Administrative efficiency also refers to cost-effectiveness (Azabou & Nugent, 1988; Musgrave & Musgrave, 1989). To measure the cost in tax administration, this article uses state tax department expenditures. The variable is normalized by state tax revenue. To measure administrative ineffectiveness due to shirking, this article uses the ratio of state tax department expenditures to tax revenue. Although the proxy measure is imperfect, studies on agency problems have used a similar proxy—the ratio of operating expenses to sales as a proxy for shirking (Ang, Cole, & Lin, 2000; Ang & Cox, 1997; Henry, 2010). Given that state tax department expenditures imply operating costs for tax administration and collection, the face validity of the proxy appears prudent. The same logic holds for tax revenue given that tax revenue is appropriately related to the amount of revenues to be collected.

The proxy, tax administration expenditure, includes contract administration costs, which encompass the cost of monitoring contractors. Contract cost may be estimated by using "10 to 20 percent of total contractor" rule or "the Office of Management and Budget (OMB) staffing formula indicated in OMB Circular A-76" (Martin, 1992). Due to limited accessibility to the data on contract administration costs, this article concentrates on overall tax administration costs, which are inclusive of administration costs of tax collection outsourcing.

Procedural Fairness

As administrative effectiveness and efficiency in tax collection are financial measures, they may not capture administrative quality in tax collection, such as how tax collectors treat taxpayers. To address administrative quality, especially procedural fairness, this article uses taxpayer appeals. Procedural fairness in tax collection refers to the collection of taxes through legal and due processes to prevent the collector from mistreating taxpayers and misusing taxpayer information.

Table 1. Analytic Framework: Public Versus Private Tax Collection Method.

Collection method	Collector	Contract form	Agency cost	Managerial value	Measures
Tax farming	Private agency	Revenue share	Overenforcement	Procedural fairness	Appeals filed in independent tax court Appeals filed in tax department
Tax bureaucracy	Public agency	Fixed wage	Shirking	Administrative efficiency and effectiveness	Collection cost Delinquent tax inventory

The tax-farming literature and agency theory implies that private tax collectors are likely to violate procedural fairness in the tax enforcement process. For example, tax collectors may mistreat taxpayers by

> harassing the alleged debtor—taxpayers as tax debtors—or others, demand a larger payment than is permitted by law, fail to send required debtor notice, threaten dire consequences if debtor fails to pay, fail to identify self as debt collector, revealing alleged debt to third parties, give impermissible calls to debtor's place of employment, fail to verify disputed debt, and continue to contact debtor after receiving cease communication notice. (U.S. Federal Trade Commission, 2011, pp. 6-9)

When taxpayers experience improper collection practices by state and state-hired private collection agencies, they may file a petition for review with the state tax department and / or the state's independent tax appeal agencies, which include boards of tax appeals, state tax courts, and the traditional court system.[1] Although tax administration consists of six phases: discovery, valuation, collection, audit, enforcement, and appeal or protest (Mikesell, 1974), the tax administration literature tends to ignore the role of taxpayer appeal or protest. In the appeal/protest phase, two types of tax appeals are observable, tax appeals internal to state tax departments (internal) and tax appeals that are external of state tax departments (external). Internal tax appeals are informal conferences or hearings that are filed and conducted by a division within the state tax department. External tax appeals are filed with the independent tax appeal forum. As noted in Mikesell (1974), taxpayers use the administrative appeal process within tax administration or through the judicial system to address issues of legality, equitability, or fair treatment. The tax appeal process has critical implications for contemporary tax collection. Institutionalization of the appeal process is one instrument to ensure the "quality" of tax administration.

To measure procedural fairness, the number of tax appeals is used. Although it is difficult to calculate the costs associated with tax appeals in monetary terms, it is meaningful to evaluate the effects of tax collection by using tax appeal caseloads. Two proxies, the number of tax appeals filed with state tax departments and the number of tax appeals filed with independent tax appeal agencies, are used as proxies for procedural fairness. Table 1 provides a summary of the framework.

Hypotheses and Models

The empirical tests concentrate on comparing differences of agency costs between states using private collectors and states using public collectors for collection of delinquent taxes. Data are for the years 2000 to 2011. The authors measure the difference in agency cost of shirking between wage and share contracts, and the difference in agency cost of overenforcement between wage and share contracts. They advance the following hypotheses based on the extant literature:

> **Hypothesis 1:** Tax collection outsourcing will increase tax appeals filed to tax court.
>
> **Hypothesis 2:** Tax collection outsourcing will increase tax appeals filed in the state tax department.
>
> **Hypothesis 3:** Tax collection outsourcing will reduce tax collection cost.
>
> **Hypothesis 4:** Tax collection outsourcing will reduce tax receivables inventory.

To estimate the effect of collector type on nonfinancial outcomes, in particular, procedural fairness as offered in Hypothesis 1 and Hypothesis 2, a random effects model is employed. The assumption is that the collection method, private or public, can be strictly exogenous to the number of tax appeals because filing tax appeals can be considered independent of the collector type. To test this strict exogeneity assumption, a Hausman (1978) test is performed. The results of the Hausman test for Hypothesis 1 ($\chi^2 = 9.39$, $p > .153$) and Hypothesis 2 ($\chi^2 = 7.03$, $p > .318$) lead to our analysis using the random effects estimator for both these hypotheses. Given that the Hausman (1978) test can lead to erroneous outcomes, we enhance the Hausman results by following Allison's (2009) hybrid estimation technique. In this hybrid method, the time-varying independent variables are transformed into deviations from their state-specific means (this is identical to fixed effects). This technique also includes the state-specific means for each of the time-varying independent variables. The dependent variables are then regressed on the deviations and means using the random effects model to ensure that the standard errors reflect the dependence among the multiple observations for each state. Postestimation tests are conducted on whether or not the mean variables are

equal to the deviation variables. If the assumption of the random effects model is correct (i.e., the α_i term is uncorrelated with the independent variables), then the deviation coefficient should be the same as the mean coefficient for each variable. Using this test, the results show that the mean coefficients and the deviation coefficients do not statistically differ, thus the random effects model is appropriate.[2]

The following two regression analyses are conducted using the Prais–Winsten[3] random effects estimation technique to measure the agency cost of overenforcement by using the number of tax appeals filed in the external tax court (Hypothesis 1) and the number of tax appeals filed in the internal tax department (Hypothesis 2).

$$\text{Tax Appeal}\left(\text{Tax Court}\right)_{it} = \mu_t + \beta\ \text{Private Collection Agency}_{it} + \delta X_{it} + \alpha_i + \varepsilon_{it},$$

and

$$\text{Tax Appeal}\left(\text{Tax Department}\right)_{it} = \mu_t + \beta\,\text{Private Collection Agency}_{it} + \ \delta X_{it} + \alpha_i + \varepsilon_{it},$$

where *i* represents indexed states, *t* represents indexes each year, and X_{it} represents control variables.

To estimate the effects of collector type on administrative effectiveness and efficiency, as offered in Hypothesis 3 and Hypothesis 4, a fixed-effect model is used. The employment of the fixed-effect model assumes that collector type is more than likely endogenous. The assumption is that the type of collector will influence administrative costs and administrative costs will influence collector type. In addition, it is assumed that paying taxes can be considered dependent on the collector type. Practitioners in the IRS have testified that the payment of taxes to a tax collecting agency is dependent on the collector type (Olson, 2007). The following two regression analyses are conducted to evaluate hypotheses three and four.

$$\text{Collection Cost}_{it} = \alpha + \beta\,\text{Private Collection Agency Dummy}_{it} + \ \delta X_{it} + \varepsilon_{it},$$

$$\text{Tax Receivables}_{it} = \alpha + \beta\,\text{Private Collection Agency Dummy}_{it} + \delta X_{it} + \varepsilon_{it}.$$

Data

Table 2 shows each variable, its description, and data sources used in the regression models.

In the regression models, the key explanatory variable is $\text{Private Collection Agency}_{it}$, which indexed whether or not a state government contracts out delinquent tax collection with private debt collectors. The analyses focus on delinquent state tax debts only, excluding property tax and nontax revenues, such as fees, charges, or revenues related to child support enforcement programs. This identifies income and sales taxes as the primary focus of the analysis. The private agency dummy variable is identified by each state tax department based on requests sent to the state tax agency. The requested information included whether or not a state used a private debt collection agency, the year the state began using the private collector, and the state's legal basis for use of the private collector. The request was sent by email and/or telephone contact. Table 3 shows each state's agency responsible for tax collection and whether each state used a private collection agency to collect state delinquent taxes.

In the regression analyses, the dependent variables measure the agency costs of shirking and overenforcement. There are four dependent variables used in the measurement of agency costs. Two of these measures are associated with financial performance such as administrative efficiency and effectiveness in tax collection whereas the remaining two measures are related to procedural fairness. The first proxy to measure administrative efficiency of tax collection is the ratio of state tax department expenditures to total tax revenue collected. This proxy shows the administrative cost for collecting US$1,000 of tax revenue. The data on tax revenue are taken from the U.S. Census and each state's CAFR. Most data on state tax department expenditures are taken from the budgetary comparison schedule in the required supplementary information provided in each state's CAFR. When one compares budgetary and finance data across states, they are confronted with a comparability issue given that each state may use different accounting and reporting principles to generate their budgetary and financial report. To mitigate the comparability issue of budgetary and financial data across states, the state's CAFR is used. Although there may be slight differences in accounting principles across states, since 1999 states have produced their CAFR based on the Governmental Accounting Standard Board's (GASB) Statement 34. Under GASB Statement 34, state CAFRs are provided on an accrual accounting basis, with CAFRs audited by an independent certified public accountant and used by bond credit raters and investors to evaluate the state governments' fiscal condition. If data were not available through the CAFR, annual reports of the state tax department or expenditure data were requested by email and telephone.

The second proxy to measure administrative effectiveness of tax collection is the ratio of tax receivables to total tax revenue collected. This proxy represents the amount of outstanding tax receivable per US$1,000 of tax revenue. The data on taxes receivable are taken from each state CAFR.

To measure procedural fairness of tax collection two proxies are offered. The initial proxy for procedural fairness is the annual number of tax appeals filed in the independent

Table 2. Variable Description and Data Sources.

Variables	Descriptions	Sources
Dependent variables		
Agency cost (Shirking)	Tax administration cost per tax revenue (in thousands) Taxes receivable (delinquent tax inventory) per tax revenue (in thousands)	Each state's *CAFR* Each state tax department's Annual Report U.S. Bureau of Census
Agency cost (Overenforcement)	Number of tax appeals (external) per capita (in thousands) Number of tax appeals (internal) per capita (in thousands)	Data and information provided by state tax departments and tax courts collected by email and telephone contacts
Explanatory variable		
Private collection agent dummy	1 = *Tax collection outsourcing* 0 = *In-house tax collection*	Data and information provided by state tax departments and tax courts collected by email and telephone contacts
Control variables		
Tax base	GSP per capita (in thousands)	BEA U.S. Bureau of Census
Tax burden	Tax-to-GSP rate (%)	U.S. Bureau of Census BEA
Size of state	Natural log of population	U.S. Bureau of Census' Statistical Abstract of the United States
Economic fluctuation	Annual unemployment rate (%)	BLS
Political attitude	Governor's party: 0 = *Democrat or Independent* 1 = *Republican*	Council of State Government's The Book of the States
Experience with private collector	Number of years of experience with private collection agency	Data and Information provided by state tax departments and tax courts collected by email and telephone contacts

Note. CAFR = Comprehensive Annual Financial Report; BEA = U.S. Bureau of Economic Analysis; BLS = U.S. Bureau of Labor Statistics; GSP = Gross State Product.

tax appeal forum. The second proxy is the annual number of tax appeals filed in the state's tax department. The majority of the data on tax appeal caseloads are collected through requests via email and telephone contacts with the remainder of tax appeal caseloads provided in the tax appeal agency's annual report. Although it may be appropriate for appeal caseloads to be standardized based on returns filed by each tax, such as income tax, sales taxes, and so on, this standardization limits the analysis to data on a single tax. To avoid this limitation, tax appeal data used are aggregated nonproperty tax totals, not tax-specific amounts, allowing for a rich variety of tax appeal cases.

Control variables included are tax base, tax burden, size of the state, economic fluctuation, political attitude, and experience of the state with private collectors. Tax base and tax burden variables are included to control for inputs in the revenue production function and isolate the level of the collection effort. The tax base is measured as annual Gross State Product (GSP) per capita and the data are taken from the U.S. Bureau of Economic Analysis. Tax burden is measured as tax-to-GSP ratio and the data are taken from the U.S. Census.

The size of the state, economic fluctuation, political attitude, and state experience variables are included to control for state socioeconomic characteristics. The size of the state is measured by state population and data are taken from the U.S. Bureau of the Census, Statistical Abstract of the United States. Economic fluctuation over time is measured by the unemployment rate and the data are taken from the U.S. Bureau of Economic Analysis. Each state's political attitude is measured as the governor's party and the data are taken from the Council of State Government's Book of the States from 2000 to 2011. State experience with private collectors is taken from the state's information regarding when they began using private tax collection agencies. Tables 4 and 5 provide the descriptive statistics for each variable broken down by whether or not the state uses private tax collectors.

Empirical Result

Table 6 reports the results of the four different regressions representing the four hypothesized effects. In the first regression (Tax Court), the effect of collector type on external tax appeals is estimated. In the second regression (Tax Department), the effect of collector type on internal tax department appeals is measured. In the third regression (Collection Costs), the effect of collector type on collection

Table 3. State Agency Responsible for Tax Collection and Private Collection Agency.

State	State agency responsible for tax collection	Private collection agency
Alabama	Dept. of Revenue	Never used
Alaska	Dept. of Revenue	Only from 2006 to 2007
Arizona	Dept. of Revenue	Never used
Arkansas	Dept. of Finance and Administration	Never used
California	Franchise Tax Board and Board of Equalization	Since 1984
Colorado	Dept. of Revenue	Since the 1990s
Connecticut	Dept. of Revenue Services	Unknown
Delaware	Dept. of Finance	Unknown
Florida	Dept. of Revenue	Since the 1990s
Georgia	Dept. of Revenue	Since 1996
Hawaii	Dept. of Taxation	Used until 2000 and then discontinued
Idaho	Tax Commission	Used until 2009 and then discontinued
Illinois	Dept. of Revenue	Since the 1990s
Indiana	Dept. of Revenue	Unknown
Iowa	Dept. of Revenue	Since the 2000s
Kansas	Dept. of Revenue	Since 1996
Kentucky	Dept. of Revenue	Used until the 1990s and then discontinued
Louisiana	Dept. of Revenue	Since 1997
Maine	Dept. of Administrative and Financial Services	Since the 1990s
Maryland	Comptroller	Since 1994
Massachusetts	Dept. of Revenue	Currently in use, but unknown starting year
Michigan	Dept. of Treasury	Since 1987
Minnesota	Dept. of Revenue	Unknown
Mississippi	Dept. of Revenue	Since the 1990s
Missouri	Dept. of Revenue	Since 1983
Montana	Dept. of Revenue	from 2004 to 2007 and from 2009 to present
Nebraska	Dept. of Revenue	Since 2007
Nevada	Dept. of Taxation	Unknown
New Hampshire	Dept. of Revenue Administration	Unknown
New Jersey	Division of Taxation	Since 1992
New Mexico	Taxation and Revenue Dept.	Since 1978
New York	Dept. of Taxation and Finance	Since the 1990s
North Carolina	Dept. of Revenue	Unknown
North Dakota	Office of State Tax Commissioner	Unknown
Ohio	Dept. of Taxation	Currently use, but unknown starting year
Oklahoma	Tax Commission	Unknown
Oregon	Dept. of Revenue	Since 1994
Pennsylvania	Dept. of Revenue	Unknown
Rhode Island	Dept. of Revenue	Unknown
South Carolina	Dept. of Revenue and Regulation	Since 1994
South Dakota	Dept. of Revenue	Since 2004
Tennessee	Dept. of Revenue	Never used
Texas	Office of the Texas Comptroller	Since 2000
Utah	Tax Commission	Since 1994
Vermont	Dept. of Taxes	Since 1996
Virginia	Dept. of Taxation	Since the 1990s
Washington	Dept. of Revenue	Never used
West Virginia	Tax Dept.	Since the 1990s
Wisconsin	Dept. of Revenue	Since the 1990s
Wyoming	Dept. of Revenue	Never used

Note. Dept. = Department.

Table 4. Descriptive Statistics for States With Private Collection Agency.

Variable	*n*	*M*	*SD*	Minimum	Maximum
Regression 1 (Tax Court)					
Number of tax appeals per capita	117	0.07	0.09	0.001	0.43
Gross State Product	117	42.65	8.38	25.32	80.05
Tax-to-Gross State Product	117	5.71	1.05	3.22	8.38
Population	117	8.91	0.95	6.51	10.53
Unemployment rate	117	6.13	2.12	3.30	13.40
Republican Governor	117	0.42	[a]	0	1
Experience with private collector	117	15.09	5.28	1	27
Regression 2 (Tax Dept.)					
Number of tax appeals per capita	33	0.23	0.22	0.015	0.70
Gross State Product	33	38.94	8.41	29.55	65.47
Tax-to-Gross State Product	33	5.63	1.03	4.27	8.28
Population	33	7.82	0.38	6.52	8.03
Unemployment rate	33	5.46	2.10	2.60	10.70
Republican Governor	33	0.64	[a]	0	1
Experience with private collector	33	10.58	6.33	1	22
Regression 3 (Collection Costs)					
Collection Cost per tax revenue	145	37.42	53.13	1.22	362.56
Gross State Product	145	39.75	7.25	24.67	65.47
Tax-to-Gross State Product	145	5.30	1.44	3.22	8.38
Population	145	8.33	0.97	6.52	10.50
Unemployment rate	145	5.73	2.11	2.30	13.40
Republican Governor	145	0.58	[a]	0	1
Experience with private collector	145	14.23	7.13	1	34
Regression 4 (Tax Receivables)					
Tax Receivable per tax revenue	264	108.12	53.92	28.27	396.35
Gross State Product	264	39.89	7.65	22.90	80.05
Tax-to-Gross State Product	264	5.56	1.47	3.22	10.66
Population	264	8.38	1.04	6.41	10.54
Unemployment rate	264	5.82	2.11	2.60	13.40
Republican Governor	264	0.53	[a]	0	1
Experience with private collector	264	14.39	6.89	1	34

[a]Standard deviation has limited meaning due to dichotomous variable measure.

costs is measured. Finally, in the fourth regression (Tax Inventory), the effect of collector type on delinquent tax is measured. All results include control variables along with controls for time and the autoregressive nature of the correlations.

Observing the overall statistical explanatory power of the models, all four models have modest explanatory power. The first regression model (Tax Court) explains about 17% of variation in the caseloads of external tax appeals. The second regression model (Tax Department) explains about 27% of variation in the tax appeal caseload of the internal tax department. The third regression model explains about 38% of the variation in collection costs. The fourth regression model explains about 13% of variation of delinquent tax inventory.

Beginning with the two results focused on procedural fairness, as measured using tax appeals, the finding is that private collection reduces the number of external tax appeals filed in tax court by about 11 cases per 100,000 population. With the average state having a population of about 6 million people, the effect is a nontrivial decrease in external tax appeals. This outcome leads to the rejection of Hypothesis 1, where it was inferred that using a tax farmer (private tax collector) would increase tax appeals filed in tax courts. The coefficient for private collection on tax appeals within the state tax department indicates that private collectors are similar to public collectors, leading to a rejection of the second hypothesis. This indicates that the administrative burden within the department is similar regardless of the tax collector type. This result is confounded for states with private tax collectors and a Republican governor. For those states, the effect is that the private tax collector increases the number of internal tax appeals filed in the tax department by about 12 cases per 100,000 population.

Explaining these observed effects of tax collection outsourcing on procedural fairness, let us begin with why the internal administrative burden is found to be similar regardless

Table 5. Descriptive Statistics for States Without Private Collection Agency.

Variable	*n*	*M*	*SD*	Minimum	Maximum
Regression 1 (Tax Court)					
Number of tax appeals per capita	58	0.11	0.17	0.004	0.89
Gross State Product	58	43.69	11.44	27.97	72.45
Tax-to-Gross State Product	58	6.38	2.20	3.63	17.53
Population	58	7.62	1.01	6.20	8.78
Unemployment rate	58	5.92	2.24	2.50	10.50
Republican Governor	58	0.48	[a]	0	1
Regression 2 (Tax Department)					
Number of tax appeals per capita	52	0.13	0.07	0.002	0.28
Gross State Product	52	40.09	10.81	26.06	72.45
Tax-to-Gross State Product	52	6.35	2.37	3.63	17.53
Population	52	7.78	0.82	6.44	8.76
Unemployment rate	52	5.89	1.93	2.50	10.50
Republican Governor	52	0.60	[a]	0	1
Regression 3 (Collection Costs)					
Collection Cost per tax revenue	85	61.98	168.49	1.55	1,049.64
Gross State Product	85	42.02	11.18	23.94	72.45
Tax-to-Gross State Product	85	5.90	1.67	3.22	17.53
Population	85	5,320	5,861	495	36,250
Unemployment rate	85	5.79	2.10	2.50	10.50
Republican Governor	85	0.51	[a]	0	1
Regression 4 (Tax Receivables)					
Tax Receivable per tax revenue	92	100.78	62.21	5.54	434.95
Gross State Product	92	39.81	8.74	27.93	71.15
Tax-to-Gross State Product	92	5.76	1.24	3.50	8.25
Population	92	8.38	7,215	500	37,692
Unemployment rate	92	5.74	2.21	2.50	10.50
Republican Governor	92	0.51	[a]	0	1

[a]Standard deviation has limited meaning due to dichotomous variable measure.

Table 6. Regression Results.

	Tax court	Tax department	Collection costs	Tax receivables
Private collection agency	−0.110***	−0.001	−68.105†	−14.933
	(−4.42)	(−0.01)	(−1.75)	(−1.57)
Natural log tax base	−0.034	0.242	−123.722	−46.156
	(−0.33)	(1.51)	(−1.09)	(−0.60)
Tax burden	0.002	−0.005	−31.945***	−13.469*
	(0.37)	(−1.10)	(−30.98)	(−2.31)
Population	−0.064***	0.047	−210.611*	−26.056
	(−3.58)	(1.56)	(−2.22)	(−0.37)
Unemployment rate	−0.006	−0.015	−9.433*	0.453
	(−1.26)	(−1.29)	(−2.44)	(0.19)
Republican governor	−0.028**	0.005	−27.726	−4.416
	(−3.10)	(0.33)	(−1.62)	(1.44)
Private collection	0.007***	0.002	−0.215	1.631
Experience	(3.99)	(0.41)	(−0.17)	(1.29)
Private Collection Agency	0.010	0.124**	22.837	5.857
× Republican Governor	(0.48)	(2.61)	(1.43)	(0.99)
Year dummies	Yes	Yes	Yes	Yes
AR(1)	Yes	Yes	Yes	Yes
R^2	.165	.274	.375	.126
()	*z* value	*z* value	*t* value	*t* value
Number of observations	175	85	207	322

Note. AR(1) = first-order autoregressive.
†$p < .10$. *$p < .05$. **$p < .01$. ***$p < .001$.

of collector type. Assuming that all cases are treated similarly in the actions of resolution through the informal conference and hearing procedures within the tax department, the collector type should have no differential impact on the internal administrative actions. The similar treatment of each case leads to similar burdens placed on the internal administration for each case. In the case of states with private tax collectors and the Republican governor, there are several possible explanations. The first is that constituents challenge the legitimacy of the private collector more often in this regime given the stance of the Republican party on outsourcing governmental functions. A second possible explanation is that the Republican governor extends an open invitation to challenging the legitimacy of the private collector to assure the constituent that the private collector is just as accurate and equitable as the public employee. The last potential explanation is that the Republican governor sees accessibility as an important aspect of governance and therefore encourages appeals if the taxpayer thinks they have been wronged.

When looking at the external administrative burden, the effect of private collection is seen to decrease the number of tax appeals filed in the independent tax court. There are potentially three explanations affecting this outcome. One explanation for these results is the potential collectability of the tax case. This explanation would indicate that the private collector is assigned to less-complex cases, which when challenged in the external tax court, are easily resolved thereby reducing the external tax court's administrative burden. The second explanation is that the taxpayer is filing the appeal based on the legitimacy of the private tax collector as an instrument of the state. The taxpayer challenges the premise that a private tax collector is a legitimate tax collector for the state. This perception of illegitimacy is quickly found to be unsubstantiated within the tax court, thereby reducing the external administrative burden. Finally, the reduction in external appeals may be due to the efficiency and effectiveness of the private tax collector, which reduces further adjudication of the tax case into the external tax court.

Both the collectability and the issue of legitimacy of the private tax collector are similar to the experience of the IRS providing some anecdotal evidence to the empirical results. In 2004, the American Jobs Creation Act permitted the IRS to hire private debt collection agencies (PCA) to assist in the collection of delinquent taxes. The request included a proposal to allow the IRS to hire PCAs, with the intent of the program to address the buildup of potentially collectible inventory that was not being worked by the IRS. The PCAs would help collect the aging receivables in exchange for commissions based on the amounts collected (Hamilton, 2003). During the PCA program, hearings occurred in Congress regarding the PCAs' economic incentives to assist taxpayers with special needs, the utilization of psychological techniques by the PCAs to collect the maximum amount from taxpayers, the fear PCAs invoked to frighten taxpayers into compliance, and the legitimacy of the PCAs as a collector of government debts (Olson, 2007). Legitimacy was interpreted in the Federal Activities Inventory Reform Act of 1998 (FAIR Act). The act barred federal agencies from hiring the private sector to conduct activities regarded as inherently governmental. Incorporated in FAIR's Section 5, an activity is considered inherently governmental if "it is so intimately related to the public interest as to require performance by Federal Government employees," and necessitates the "exercise of discretion" in applying governmental authority or the "making of value judgments relating to monetary transactions and entitlements." Using both testimony and the FAIR Act, Congress discontinued funding the PCA program due to its contentious nature, perception of legitimacy, resulting in lower overall collections of the aging receivables.

Exploring the results for administrative efficiency, the results show that private collection decreases state tax departments' administrative costs by about US$68 per thousand dollars of tax revenue when compared with tax collection by public employees. This supports the third hypothesis that infers shirking under the fixed-wage contract is larger than the agency cost under the incentive-based contract in tax collection. Although the second measure of administrative effectiveness indicates a potential reduction in the delinquent tax inventory over time through private collection agencies, the results are statistically insignificant, leading to a rejection of Hypothesis 4. The conclusion is that private collectors do not statistically reduce the ratio of tax receivables to tax revenues in state tax departments.

Although the discussion of the results has focused on the hypothesized relationships, the findings indicate that the proxy measures for administrative burden and procedural fairness are affected by the socioeconomic characteristics of the state. Increases in the tax burden, population, and unemployment rate reduces collection costs whereas increasing the tax burden reduces tax receivables. Turning our attention to the external tax court appeals, population and Republican governorship reduce the number of appeals while increases in prior experience with the private collector increases the number of appeals, although this effect is quite small. Looking at the number of internal tax appeals to the state tax department, only states with both private collectors and Republican governors are affected, in this case those states are expected to see an increase in the number of internal tax appeals to the state tax department, an indication of an increase in internal administrative burden.

Robustness Check

As observed in Table 6, the effect of the tax base is insignificant across all of the estimates. To assess changes in specification, we offer all four models with our control for state tax base removed. We offer these results in Table 7. Our finding is that our variable of interest, private collection agency, is virtually unaffected by the change in specification of the

Table 7. Robustness Check.

	Tax court	Tax department	Collection costs	Tax receivables
Private collection agency	−0.111***	−0.009	−72.655†	−15.080
	(−4.74)	(−0.17)	(−1.70)	(−1.54)
Tax burden	−0.002	−0.006	−33.334***	−12.451*
	(−0.48)	(−0.99)	(−23.00)	(−2.68)
Population	−0.063**	−0.004	−257.134†	0.404
	(−3.59)	(−0.21)	(−1.94)	(0.01)
Unemployment rate	−0.006	−0.023†	−5.908**	1.700
	(−1.14)	(−1.68)	(−2.98)	(1.19)
Republican Governor	−0.028**	0.011	−26.438	−4.836
	(−3.33)	(0.67)	(−1.64)	(−1.63)
Private collection experience	0.007***	−0.001	0.591	1.792
	(3.89)	(−0.38)	(0.38)	(1.22)
Private Collection Agency × Republican Governor	0.010	0.164**	21.761	6.480
	(0.50)	(2.88)	(1.46)	(1.02)
Year Dummies	Yes	Yes	Yes	Yes
AR(1)	Yes	Yes	Yes	Yes
R^2	.165	.281	.372	.123
()	*z* value	*z* value	*t* value	*t* value
Number of Observations	175	85	207	322

Note. AR(1) = first-order autoregressive.
†$p < .10$. *$p < .05$. **$p < .01$. ***$p < .001$.

model. We conclude that our results are robust to changes in the tax base within the state.

Conclusion

This study provides an examination of the state tax collection process, exploring questions about the government's contractual choice of tax collection methods, outsourcing or insourcing the tax receivables collection process. To explore this understudied aspect of the governments' tax collection process, effectiveness, efficiency, and fairness in the collection process of tax receivables were explored.

Since the 1980s, many state governments have instituted innovations associated with using private debt collection agencies to recover their tax debts. Given the paucity of empirical research regarding this innovative practice, the empirical analyses presented the effects of using private tax collectors in tax administration in state governments. Through the use of a unique state panel data set spanning the time period from 2000 to 2011, the findings lead to two important conclusions in tax administration.

While the empirical results are mixed, the two implications are that tax collection outsourcing leads to a modest effect on procedural fairness, but the degree of the effect is affected by the governor's party affiliation. Private tax collectors are statistically similar to public employees with regard to the number of tax appeals that are first filed internally with the state in the tax appeal division. When there is a private collector and a Republican governor, the effect is an increase in appeals with the internal tax department. When we look at the effects on cases advancing to external tax courts, the findings show that private tax collectors reduce the number of appeals in the external tax court. Taking the point estimates, the increase in internal tax appeals offsets the decrease in external tax appeals for those states with both the private collector and a Republican governor.

When looking at the implications of private tax collectors on the costs of tax administration, the findings show a decrease in costs; however, the private collector does not influence the amount of tax receivables accrued. Although private collection is not financially effective in terms of reducing the ratio of taxes receivable to tax revenue, private collection is financially efficient in terms of administrative cost savings.

These mixed effects of contemporary tax collection outsourcing may be due to differences between the historical behavior of tax farmers and the contemporary contracting out of delinquent taxes. The contemporary contracting out is a hybrid-privatized tax collection system, whereas the early historical tax farming was completely privatized. The current outsourcing of delinquent tax collection supplements the public tax collection agencies, while the early historical tax farming was a substitute for the bureaucratic collection system. Contemporary contracting out in tax collection differs from historical tax farming in terms of the extent to which the taxpayer is protected by legal and administrative systems. The effects of the historical practice of tax farming on administrative effectiveness, efficiency, and procedural fairness are clear;

tax farming had a strong positive effect on effectiveness and efficiency and a strong negative effect on fairness. The results of these analyses observe that the effects of the contemporary practice of tax collection outsourcing are moderate, indicating that outsourcing has moderated the effects on the benefits to administrative effectiveness, efficiency, and the harms in procedural fairness.

The findings of this study are interesting and they do provide much to consider, but they have limitations and potential for additional research. The sample used required a series of proxies due to data limitations. The measures for our appeals, both internal and external, provide no information on how they were adjudicated; only the count of appeals is provided. Moreover, none of the states report the amounts of delinquent taxes independent of tax receivables. These limitations, based on data, could be addressed in future research. In the future, research can enhance this preliminary study by enhancing the measures presented in this study, addressing issues related to variation among the contracting states, and examining the effect of state delinquent tax outsourcing more completely. This would allow an extension of this study, providing valuable information to states, which are considering the use of private collection agencies.

Declaration of Conflicting Interests

The author(s) declared no potential conflicts of interest with respect to the research, authorship, and/or publication of this article.

Funding

The author(s) received no financial support for the research, authorship, and/or publication of this article.

Notes

1. For simplification, we use the word "state tax department" when we mention state agencies responsible for tax collection although the name of agency may vary by state. For the same reason, we use the word "tax court" and "the independent tax appeal agency" interchangeably because tax court is the representative (or exemplary) form of the independent tax appeal agency.
2. As suggested by one of the reviewers, the endogeneity of the use of private collectors is an important issue. Following the reviewer's suggestion, we use OLS to estimate a difference-in-difference (DiD) model using a series of dummy and interaction variables. Qualitatively, we come to a similar conclusion as our fixed and random effects estimates. The issue that arose using the DiD method is the parallel trends assumption. To test the parallel trends assumption, we follow the work of Mora and Reggio (2013). Unfortunately, the results are that the trends do differ between treated and control states in our sample, thereby violating the parallel trends assumption.
3. Prais–Winsten estimation is a type of feasible generalized least squares to correct for first-order autoregressive, AR(1), which indicates that the prior year's tax appeals affect the current year's tax appeals, which is the most usual type of serial correlation. In panel data, the time serial correlation is a more important problem than heteroskedasticity "because it usually has a larger impact on standard errors and the efficiency of estimators than does heteroskedasticity" (Wooldridge, 2009, p. 435).

References

ACA International. (2007). *The Impact of ThirdParty Debt Collection on the U.S. National and State Economies in 2006*. Minneapolis: ACA International.

Alexander, F. S. (2000). Tax lines, tax sales, and due process. *Indiana Law Journal*, *75*, 747-807.

Allingham, M. G., & Sandmo, A. (1972). Income tax evasion: A theoretical analysis. *Journal of Public Economics*, *1*, 323-338.

Allison, P. D. (2009). *Fixed effects regression models* (Vol. 160). Thousand Oaks, CA: SAGE.

Ang, J. S., Cole, R. A., & Lin, J. W. (2000). Agency costs and ownership structure. *The Journal of Finance*, *55*, 81-106.

Ang, J. S., & Cox, D. R. (1997). Controlling the agency cost of insider trading. *Journal of Finance and Strategic Decision*, *10*(1), 15-25.

Azabou, M., & Nugent, J. B. (1988). Contractual choice in tax collection activities: Some implications of the experience with tax farming. *Journal of Institutional and Theoretical Economics*, *144*, 684-705.

Azabou, M., & Nugent, J. B. (1989). Tax farming: Anachronism or optimal contract? An illustration with respect to Tunisia's weekly markets. In M. K. Nabli & J. B. Nugent (Eds.), *The new institutional economics and development: Theory and applications to Tunisia* (pp. 178-99). Amsterdam, The Netherlands: North-Holland.

Bandura, A. (1986). *Social foundations of thought and action: A social cognitive theory*. Englewood Cliffs, NJ: Prentice Hall.

Bandura, A. (1988). Organizational applications of social cognitive theory. *Australian Journal of Management*, *13*, 275-302.

Becker, G. S. (1968). Crime and punishment: An economic approach. *Journal of Political Economy*, *76*, 169-217.

Boyne, G. A. (1998). Bureaucratic theory meets reality: Public choices and service contracting in U.S. local government. *Public Administration Review*, *58*, 474-484.

Brown, T. L., Potoski, M., & Van Slyke, D. M. (2006). Managing public service contracts: Aligning values, institutions, and markets. *Public Administration Review*, *66*, 323-331.

Byrne, P. D. (1995). Privatization in the area of tax administration: An overview. Harvard University Development Discussion Papers (DDP) 508 (Taxation Research Series 24), Cambridge, MA: Harvard Institute for International Development.

Cosgel, M. M., & Miceli, T. J. (2009). Tax collection in history. *Public Finance Review*, *37*, 399-420.

da Cruz, N. F., Berg, S. V., & Marques, R. C. (2013). Managing public utilities: Lessons from Florida. *Journal of Local Self Government*, *11*(2), 101-118.

Deci, E. L., & Ryan, R. M. (1985). The general causality orientations scale: Self-determination in personality. *Journal of Research in Personality*, *19*, 109-134.

Denison, D. V., & Eger, R. J., III. (2000). Tax evasion from a policy perspective: The case of the motor fuels tax. *Public Administration Review*, *60*, 163-172.

Eger, R. J., III, & Hackbart, M. M. (2005). Road fund tax compliance: An analysis of enhancement strategies. *Public Budgeting & Finance*, *25*(1), 66-83.

Escobari, D. (2012). Imperfect detection of tax evasion in a corrupt tax administration. *Public Organization Review*, *12*, 317-330.

Fosler, R. S. (1978). State and local government productivity and the private sector. *Public Administration Review*, *38*(1), 22-27.

Hamilton, A. (2003, February 10). Bush proposes private agencies collect known tax delinquencies. *Tax Notes, pp*. 885-887.

Hausman, J. A. (1978). Specification tests in econometrics. *Econometrica*, *46*, 1251-1271.

Henry, D. (2010). Agency costs, ownership structure and corporate governance compliance: A private contracting perspective. *Pacific-Basin Finance Journal*, *18*, 24-46.

Hood, C. (1986). Privatizing UK tax law enforcement? *Public Administration*, *64*, 319-333.

Iversen, V., Fjeldstad, O.-H., Bahiigwa, G., Ellis, F., & James, R. (2006). Private tax collection—Remnant of the past or a way forward? Evidence from rural Uganda. *Public Administration and Development*, *26*, 317-328.

Jensen, M. C., & Meckling, W. H. (1976). Theory of the firm: Managerial behavior, agency costs and ownership structure. *Journal of Financial Economics*, *3*, 305-360.

Kiser, E. (1994). Markets and hierarchies in early modern tax systems: A principal-agent analysis. *Politics & Society*, *22*, 284-315.

Kiser, E., & Baker, K. (1994). Could privatization increase the efficiency of tax administration in less-developed countries? *Policy Studies Journal*, *22*, 489-501.

Levi, M. (1988). *Of rule and revenue*. Berkeley: University of California Press.

Liu, X., Hotchkiss, D. R., & Bose, S. (2008). The effectiveness of contracting-out primary health care services in developing countries: A review of the evidence. *Health Policy and Planning*, *23*, 1-13.

Luitel, H. S., & Sobel, R. S. (2007). The revenue impact of repeated tax amnesties. *Public Budgeting & Finance*, *27*(3), 38-19.

Ma, J. (2003). New Public Management in the early modern period: Lessons from tax farming history. *Administrative Theory & Praxis*, *25*, 435-456.

Martin, L. L. (1992). A proposed methodology for comparing the costs of government verses contract service delivery. In International City/County Management Association (Ed.), *Municipal year book* (pp. 12-15). Washington, DC: International City/County Management Association.

Marvel, M. K., & Marvel, H. P. (2007). Outsourcing oversight: A comparison of monitoring for in-house and contracted services. *Public Administration Review*, *67*, 521-530.

Melita, A. (1997). Much ado about $25 million: Implications of privatizing the collection of delinquent federal taxes. *Virginia Tax Review*, *16*, 699-726.

Mikesell, J. L. (1974). Administration and the public system: A view of tax administration. *Public Administration Review*, *34*, 615-624.

Mikesell, J. L. (1976). Property market dynamics, local economies, and tax delinquency. *State and Local Government Review*, *8*(2), 41-45.

Mikesell, J. L. (1984). Tax amnesties as a tool for revenue administration. *State Government*, *57*(4), 114-117.

Mikesell, J. L., & Ross, J. M. (2012). Fast money? The contribution of state tax amnesties to public revenue systems. *National Tax Journal*, *65*, 529-562.

Milward, B. H., & Provan, K. G. (2000). Governing the hollow state. *Journal of Public Administration Research and Theory*, *10*, 359-379.

Mirrlees, J. A. (1976a). Optimal tax theory: A synthesis. *Journal of Public Economics*, *6*, 327-358.

Mirrlees, J. A. (1976b). The optimal structure of incentives and authority within an organization. *Bell Journal of Economics*, *7*, 105-131.

Mitnick, B. M. (1973). *Fiduciary rationality and public policy: The theory of agency and some consequences*. Paper presented at the annual meeting of the American Political Science Association, September 1973, New Orleans, LA.

Mitnick, B. M. (1975). The theory of agency: The policing "paradox" and regulatory behavior. *Public Choice*, *24*, 27-42.

Moe, R. C. (1987). Exploring the limits of privatization. *Public Administration Review*, *47*, 453-460.

Moe, T. M. (1982). Regulatory performance and presidential administration. *American Journal of Political Science*, *26*, 197-224.

Moe, T. M. (1984). The new economics of organization. *American Journal of Political Science*, *28*, 739-777.

Mora, R., & Reggio, I. (2013). *Treatment effect identification using alternative parallel assumptions* (Working Paper 12-33, Economic Series [48]). Universidad Carlos III Madrid, Departamento de Economia, Madrid, Spain

Musgrave, R. A., & Musgrave, P. B. (1989). *Public finance in theory and practice*. McGraw-Hill.

Ni, A. Y., & Bretschneider, S. (2007). The decision to contract out: A study of contracting for E-government services in state governments. *Public Administration Review*, *67*, 531-544.

Olson, N. E. (2007, May 23). *Written Statement of Nina E. Olson, national taxpayer advocate: Before the Committee on Ways and Means. U.S. House of Representatives, Hearing on IRS Private Debt Collection Program*. Retrieved from https://www.irs.gov/pub/tas/ntatestimony_wm_pdc_052307.pdf

Pack, J. R. (1989). Privatization and cost reduction. *Policy Sciences*, *22*(1), 1-25.

Park, J. R. (1987). Privatization of public-sector services in theory and practice. *Journal of Policy Analysis and Management*, *6*, 523-540.

Parle, W. M., & Hirlinger, M. W. (1986). Evaluating the use of tax amnesty by state governments. *Public Administration Review*, *46*, 323-331.

Perry, J. L., & Wise, L. R. (1990). The motivational bases of public service. *Public Administration Review*, *50*, 367-373.

Poindexter, G. C., Rogovoy, L. A., & Wachter, S. (1997). Selling municipal property tax receivables: Economics, privatization, and public policy in an era of urban distress. *Connecticut Law Review*, *30*, 157-210.

Poole, R. W., & Fixler, P. E. (1987). Privatization of public-sector services in practice: Experience and potential. *Journal of Policy Analysis and Management*, *6*, 612-625.

Prager, J. (1994). Contracting out government services: Lessons from the private sector. *Public Administration Review*, *54*, 176-184.

Resnick, M. T. (2005). Outsourcing federal tax collection. *Houston Business and Tax Law Journal*, *5*, 128-159.

Romzek, B. S., & Johnston, J. M. (2005). State social service contracting: Exploring the determinants of effective contract accountability. *Public Administration Review*, *65*, 436-449.

Ross, S. A. (1973). The economic theory of agency: The principal's problem. *The American Economic Review*, *63*, 134-139.

Ryan, R. M., & Deci, E. L. (2000). Self-determination theory and the facilitation of intrinsic motivation, social development, and well-being. *The American Psychologist*, *55*, 68-78.

Sappington, D. E. M., & Stiglitz, J. E. (1987). Privatization, information and incentives. *Journal of Policy Analysis and Management*, *6*, 567-582.

Smith, C. N. (1997). The limits of privatization: Privacy in the context of tax collection. *Case Western Reserve Law Review*, *47*, 627-670.

Smith, R. W., & Bertozzi, M. (1998). Principals and agents: An explanatory model for public budgeting. *Journal of Public Budgeting, Accounting, & Financial Management*, *10*, 325-353.

Snavely, K. (1988). Innovations in state tax administration. *Public Administration Review*, *48*, 903-910.

Snavely, K. (1989). What's new and used in state tax administration: How top officials rate innovations. *State & Local Government*, *21*(2), 60-65.

Song, Y. D., & Yarbrough, T. E. (1978). Tax ethics and taxpayer attitudes: A survey. *Public Administration Review*, *38*, 442-452.

Srinivasan,T. N. (1973). Tax evasion: A model, *Journal of Public Economics*, *2*, 339-346.

Stella, P. (1993). Tax farming: A radical solution for developing country tax problems? *Staff Papers (International Monetary Fund)*, *40*, 217-225.

Sullivan, H. J. (1987). Privatization of public services: A growing threat to constitutional rights. *Public Administration Review*, *47*, 461-467.

Texas Comptroller of Public Accounts. (2014). *Cross Government (CG) Issues 23: Improve collection of state receivables*. Retrieved from http://www.window.state.tx.us/tpr/tpr4/c8.cg/c823.html

Toma, E. F., & Toma, M. (1992). Tax collection with agency costs: Private contracting or government bureaucrats? *Economica*, *59*(233), 107-120.

U.S. Department of the Treasury. (2013). *U.S. Government receivables and debt collection activities of federal agencies*. Washington, DC: U.S. Department of Treasury.

U.S. Federal Trade Commission. (2011). *Annual report 2011: Fair Debt Collection Practice Act*. Washington, DC: U.S. Federal Trade Commission.

U.S. Government Accountability Office. (2008). *Tax debt collection: IRS has a complex process to attempt to collect billions of dollars in unpaid tax debt* (GAO-08-728). Washington, DC: U.S. Government Accountability Office.

U.S. Government Accountability Office. (2012). *Federal tax debts: Factors for considering a proposal to report tax debts to credit bureaus* (GAO-12-939). Washington, DC: U.S. Government Accountability Office.

U.S. Government Accounting Office. (1993). *Tax administration: New delinquent tax collection methods for IRS* (GAO/GGD-93-67). Washington, DC: U.S. Government Accounting Office.

U.S. Government Accounting Office. (1994). *Tax administration: State tax administrators' views on delinquent tax collection method* (GAO/GGD-94-59 FS). Washington, DC: U.S. Government Accounting Office.

Webber, C., & Wildavsky, A. (1986). *A history of taxation and expenditure in the western world*. New York, NY: Simon & Schuster.

White, E. N. (2004). From privatized to government-administered tax collection: Tax farming in eighteenth-century France. *The Economic History Review*, *57*, 636-663.

Wood, B. D., & Waterman, R. W. (1991). The dynamics of political control of the bureaucracy. *American Political Science Review*, *85*, 801-828.

Wood, B. D., & Waterman, R. W. (1993). The dynamics of political-bureaucratic adaptation. *American Journal of Political Science*, *37*(2), 497-528.

Wood, R., & Bandura, A. (1989). Effect of perceived controllability and performance standards on self-regulation of complex decision making. *Journal of Personality and Social Psychology*, *56*, 805-814.

Wooldrigdge, J. M. (2009). *Introductory Econometrics: A Modern Approach*, Mason, Ohio: South-Western

Wright, B. E. (2004). The role of work context in work motivation: A public sector application of goal and social cognitive theories. *Journal of Public Administration Research and Theory*, *14*, 59-78.

Author Biographies

Sungkyu Jang is an assistant professor of Public Administration in the Department of Political Science, Indiana University-South Bend. His research interest are in the administration and policy surrounding issues of revenue generation for governments.

Robert J. Eger III is a professor and chair of the Financial Management Area in the Graduate School of Business and Public Policy, Naval Postgraduate School. His research is focused on the intersection of accounting and public policy.